Support and Maintenance

The SMARTS system nucleus is written entirely in IBM 390 Assembler and is therefore supported using ZAPs as the quickest and easiest way to provide corrections to customers.

This chapter covers the following topics:

- Reporting Problems
- Problem Resolution
- Applying Maintenance

Reporting Problems

Problems should be reported to your local technical support center. You will be asked to provide whatever information is required to solve the problem. Generally, you should have the following available when reporting a problem:

1. Version, revision, and SM level of the SMARTS HTTP server software where the problem occurred.
2. Type and level of operating system where SMARTS was running.
3. Version, revision, and SM level of other products associated with the problem (for example, Natural, ADABAS).
4. Message numbers where applicable.
5. System log for a period of time before the event.
6. Sequence of actions used to cause the problem, if reproducible.
7. Name and offset of the module where the problem occurred. Where an ABEND occurs within a SMARTS module, RC generally points to the start of the module where you will find a constant identifying the module. Subtract the PSW address from the address in RC to provide the offset into the module.
8. The register contents at the time of the ABEND.

With this information, it may be possible to identify a previous occurrence of the problem and a correction. If this is not the case, the following additional information is required:

1. The Com-plete online dump or SMARTS address space dump, as appropriate.
2. Output from the job where the failure occurred.
3. Other information that support personnel feel is relevant.

Problem Resolution

A number of tools are available to diagnose HTTP server problems as follows.

Thread Dump Diagnosis under Com-plete

When an application program ABENDs within the SMARTS environment running under Com-plete, an online dump is written to the SD file. This dump may be viewed immediately and online using the UDUMP utility. Refer to the Com-plete Utilities Manual for more information.

The dumps may be printed using the batch utility TUDUMP. Refer to the Com-plete System Programmer's Manual for more information about TUDUMP.

HTTP Server Trace Facilities

When HTTP requests are not being processed successfully, it can be useful to trace incoming and outgoing data. For incoming data, the HEADER trace will provide details of exactly how HTTP server has interpreted a given request while DATA tracing will show the exact format of data as it is received at the HTTP server side and what is actually sent back by the HTTP server request processing module (or the CGI program) to the web browser. HTTP server tracing may be activated using the HTTP server TRACE configuration parameter.

Applying Maintenance

ZAPs for problems in the SMARTS product are provided in the following format:

```
HTvrnnn
```

-where

HT	identifies this as a ZAP for the SMARTS HTTP server
vr	is the version and revision number of SMARTS to which the ZAP applies
nnn	is a sequential number uniquely identifying the ZAP

When a ZAP is provided to correct a problem, Software AG recommends that you use the following procedure:

1. Copy the load modules zapped by the fix to a temporary load library.
2. Apply the ZAP to the modules in the temporary load library using the AMASPZAP utility.

   Note:
   When a ZAP applies to an environment-specific module (that is, one beginning with the characters HAeN or PAen where "e" is any character other than "A), it may be necessary to relink the module to activate the change.
3. Run SMARTS, placing this temporary load library in front of the standard HTPvrs.LOAD dataset in the COMPLIB concatenation.

4. Ensure that the problem has been resolved. If this is not possible immediately, it may be advisable to run in this way for a period of time until it is clear that
    - the ZAP has not caused any problems; and
    - the problem the ZAP is intended to fix has been corrected.
5. If the ZAP causes problems or does not clear the problem, the temporary load library may be deleted or cleared.
6. When you have verified the correction, copy the zapped modules back into your HTPvrs.LOAD dataset.